

CLAIMS

1. A power monitoring arrangement for semiconductor light emitting devices used in optoelectronic packages comprising:

a mounting structure having a mounting surface;

a light emitting device providing emitted light at a monitoring output and an active output, the light emitting device being positioned on the mounting surface of the mounting structure;

a monitor photodetector having a light sensitive region, the monitor photodetector being positioned on the mounting surface of the mounting structure proximate the light emitting device; and

a hemisphere of material positioned to include at least the light sensitive region of the monitor photodetector and the monitoring output of the light emitting device, an outer surface of the hemisphere operating as a reflector to reflect light from the monitoring output of the light emitting device to the light sensitive region of the monitor photodetector.

2. A power monitoring arrangement for semiconductor light emitting devices used in optoelectronic packages as claimed in claim 1 wherein the light emitting device is an edge emitting semiconductor laser and the monitoring output is the rear emission.

3. A power monitoring arrangement for semiconductor light emitting devices used in optoelectronic packages as claimed in claim 1 wherein the hemisphere of material includes one of silicone and silicon compounds, various epoxies and plastics, and liquid glass.

4. A power monitoring arrangement for semiconductor light emitting devices used in optoelectronic packages as claimed in claim 1 wherein the hemisphere of material fixes the light emitting device and the monitor photodetector to the mounting surface of the mounting structure.

5. A power monitoring arrangement for semiconductor light emitting devices used in optoelectronic packages comprising:

a mounting structure having a mounting surface;

an edge emitting semiconductor laser providing emitted light at an active front output and a rear output, the light emitting device being positioned on the mounting surface of the mounting structure;

a monitor photodetector having a light sensitive region, the monitor photodetector being positioned on the mounting surface of the mounting structure proximate the rear output of the edge emitting semiconductor laser; and

a hemisphere of material positioned to include at least the light sensitive region of the monitor photodetector and the rear output of the edge emitting semiconductor laser, the hemisphere of material including material that conducts light of a frequency emitted by the edge emitting semiconductor laser, an outer surface of the hemisphere operating as a reflector to reflect light from the rear output of the edge emitting semiconductor laser to the light sensitive region of the monitor photodetector.

6. A power monitoring arrangement for semiconductor light emitting devices used in optoelectronic packages as claimed in claim 5 wherein the hemisphere of material includes one of silicone and silicon compounds, various epoxies and plastics, and liquid glass.

7. A power monitoring arrangement for semiconductor light emitting devices used in optoelectronic packages as claimed in claim 5 wherein the hemisphere of material fixes the light emitting device and the monitor photodetector to the mounting surface of the mounting structure.

8. A method of mounting power monitoring apparatus for semiconductor light emitting devices in optoelectronic packages comprising the steps of:

providing a mounting structure having a mounting surface;

positioning a light emitting device with an emitted light output and a monitoring output on the mounting surface of the mounting structure;

positioning a monitor photodetector having a light sensitive region on the mounting surface of the mounting structure proximate the monitoring output of the light emitting device; and

forming a hemisphere of material on the mounting surface so as to include at least the light sensitive region of the monitor photodetector and the monitoring output of the light emitting device, an outer surface of the hemisphere operating as a reflector to reflect light from the monitoring output of the light emitting device to the light sensitive region of the monitor photodetector.

9. A method as claimed in claim 8 wherein the step of forming the hemisphere of material includes delivering a drop

of the material such that natural adhesion to the mounting surface forms the hemisphere normally.

10. A method as claimed in claim 9 wherein the step of forming the hemisphere of material includes using a material including one of silicone and silicon compounds, various epoxies and plastics, and liquid glass.

11. A method as claimed in claim 8 wherein the step of positioning a light emitting device includes positioning a semiconductor edge emitting laser with a rear light output positioned within the hemisphere.